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ABSTRACT

The Biological Sciences Curriculum Study (BSCS) Human Sciences Project developed, produced, and field tested 13 interdisciplinary, non-traditional, non-text science curriculum modules for early adolescents, ages 11 to 14. A codebook (ED 211 382) contains the frequencies for the value of 23 variables for each of the 3,173 student-activity evaluation interactions (cases) for the activities in the KNOWING module, which was field tested (Spring 1977) with different schools and teachers than those participating in the field test of other modules. This user's guide documents the code book for the data tape KNOWACT, a tape containing 15 variables of student ratings of the 43 student activities in the KNOWING module. A list of variable names and labels with associated page numbers for the data file is provided. (Author/JN)

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Human Sciences KNOWING Module Data File, HSPKNOW

A file of the evaluation data obtained during the field test of the BSCS Human Sciences KNOWING Module between April and June, 1977. HSPKNOW contains 313 variables for 442 cases. This User's Guide also documents the code book for the data tape KNOWACT, a tape containing 15 variables of student ratings for each of the 43 student activities in the KNOWING Module.

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User's Guide for the Machine-Readable Data Files

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ABSTRACT

The KNOWING Module was produced and field tested in the school year 1976 and '77. It was the last module in the BSCS Human Sciences Project, which developed, produced, and field tested fourteen interdisciplinary three year science curriculum modules designed especially for eleven to thirteen year olds. The field test of KNOWING followed by one year the three year field test of the other thirteen Human Sciences Modules. Twelve test sites were selected for testing KNOWING. These test sites were distributed geographically in different sections of the United States. Half of the test teachers had had previous experience with Human Sciences and half had had no previous experience with teaching these materials. Data for 446 students are contained in the data tape KSPKNOW. These students were eighth graders in twelve schools with fourteen teachers who had studied their regular science curriculum in the school year 1976 and '77. In April, 1977, they changed to the Human Sciences KNOWING Module and utilized this set of instructional materials from April until the termination of the school year in June, 1977.

The data file HSPKNOW contains 310 variables for the 446 student cases, comprising the field test data from the testing of KNOWING. The unique feature of student choice of activities as they studied this module makes the data file a valuable resource for studies of the varied curricula chosen by each student.

The second data file, KNOWACT, is described in this User's Guide. This file was developed from the activity evaluation forms completed by each student for each activity he or she chose. This file is cross-referenced with the data file HSPKNOW so that data about each student can be correlated using the two files. HSPKNOW contains both module specific and general data. The evaluation design was a prepost experimental group-only design. In addition to the pre- and post-test data, quizes, titled Problems to Solve, were administered to each student following the completion of each activity chosen. Responses to these activity specific tests are part of the tape record. In addition to the activity specific data, an attitude scale and a logic test were administered to a fifty percent random sample of the students. These data, plus date of birth, sex, school, teacher identifier, and ethnic group are included in the data tape. The data are stored on an SPSS systems file and may be obtained with or without SPSS labels. Additional materials regarding the field test of Human Sciences are also available.

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Codebook Contents, HSPKNOW

		Page
Identification		
SCHL	School Number	1
TCHR	Teacher Number	2
STUDNT	Student Number	3
SEX	Sex of Student	3
AGEMO	Age of Student in Months as of April 1977	4
ETHGRP	Ethnic Group of Student	4
SCHLORG	School Organization	5
SCHLSITE	School Demographic Description	5
Pretest		
PRE1 TO PRE44		6
Birthdate		
YOB	Year of Birth	28
MOB	Month of Birth	28
DOB	Day of Birth	29
How is Your Logic?		
HYLA1 TO HYLA13		29
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MSPACE1 TO MSPACE3	Materials in Space	77
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MAGIC1 TO MAGIC2	Magic Motion	103
RAIN1 TO RAIN3	The Rainmakers	104
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GRANNY1	Weather--Granny Oakes	106
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STORM1 TO STORM3	The Storm	109

Rank Order of Courses by Students
SCIRNK TO MISRNK 110

Science Questionnaire, Human Sciences
HS1 to HS18 122

Science Questionnaire, Regular Science
REGSCI1 TO REGSCI18 131

Posttest
POST1 TO POST44 140

History of the Originating Project

The KNOWING Module was the final module of the BSCS Human Sciences Program to be developed and field tested. The Human Sciences curriculum project, sponsored by the National Science Foundation, developed and field tested fourteen interdisciplinary science modules for use in classrooms for early adolescents. Thirteen of these modules were field tested with a single group of students in seven test schools between 1973 and 1976. The field test began with sixth graders in 1973, and concluded when these same students were eighth graders in 1976. A module, the basic instructional unit, consisted of a group of interrelated student activities. Each module was designed to last from six to nine weeks in a classroom. Level I modules, tested in grade six, were designed to last only six or seven weeks while Level II modules, tested in grade eight, were designed for a nine or ten week period. The complete history of the Human Sciences curriculum project is to be found in Ross (1981). A description of the test sites and other critical information about the field tests and data collected are provided in Robinson (1981a). Complete copies of the procedures and instruments used in the formative evaluation of the Human Sciences Program and specifically of the KNOWING Module are available in Robinson (1981b).

The KNOWING Module, containing 44 student activities, was tested in the spring of 1981 with a different group of eighth grade students from those testing the other Level II modules. The field test of KNOWING began in April, 1977, in 12 schools with 14 teachers and 19 classrooms. Seven of the test teachers had had experience with at least one of the previous years of Human Sciences field testing. Seven teachers were entirely new to the Human Sciences Program and had no specific orientation to the testing of the KNOWING Module by the Human Sciences staff. These seven teachers had received orientation or other information about the Human Sciences Program by attending institutes in various colleges or at meetings of national organizations.

The field test of KNOWING lasted for a period of ten to eleven weeks, depending upon school closure, but did conclude with the termination of school in June, 1977. Five hundred thirty-nine students were enrolled in the 19 field test classrooms. The KNOWING data file contains data on 442 cases from these test classes. The unique features of the Human Sciences classroom are important in understanding the data collected. The unit of material utilized by students was the activity. Each activity was a self-contained package of from one to eight or ten pages with data sheets where appropriate, materials, equipment, supplies, or other objects needed to do the study, and complete instructions for a student as to how, why, and what to investigate. No activities were assigned. Students had the option to choose the activities they wished to study. After selecting an activity, they were to gather the materials according to activity instructions and initiate their study. If there were seeds to plant or other operations that were followed by a delay of time, they were asked to choose another study and get it underway while waiting for development of plants or animals.

The activities in KNOWING were divided into two groups. Each group consisted of four clusters of activities. A cluster contained related activities around a specific problem, such as knowing the past. Group I and Group II activity clusters are presented in Table 1. In order to obtain a balanced use of the activities, one half of the test classes began the module with Group I activities available, but not Group II. The other half of the test classes had activities from Group II available, but not those of Group I.

TABLE 1
Group I and Group II Activity Clusters in KNOWING

GROUP I	GROUP II
Know the Past (7 Activities)	Knowing About Man (3 Activities)
Heavens Above (4 Activities)	Notions of Motion (6 Activities)
The Human Body (6 Activities)	Whatever the Weather (5 Activities)
Materials and Shapes (4 Activities)	Knowing About People (8 Activities)
Integrative (all class) Ways of Knowing	

The evaluation design was quasi-experimental, following Campbell and Stanley (1963) designated as a one group pre-posttest design. The treatment period lasted from about April 7, 1977, to the end of the school year, a period of from nine to eleven weeks in the selected test schools.

Test Site Selection

Field test teachers and administrators from the three-year Human Sciences field test program were contacted by questionnaire to determine if they would be interested and able to test the KNOWING Module in the spring of 1977. In addition, college and university science and social science educators who had given workshops on Human Sciences were contacted to recommend teachers and schools who might be interested in testing the module. Questionnaires were sent to those schools and to the interested field test schools. Final site selection was made to include seven experienced Human Science teachers and seven teachers who had not had training from the BSCS staff. This criterion plus geographical distribution and kind of administrative unit were the major site selection criteria.

Instrumentation

Two test instruments were designed to gather information prior to field testing and two to gather data at the termination of field testing. Two kinds of instruments were also used to gather data continuously throughout the module. These latter instruments were activity specific to reduce class time for testing. A fifty percent random sample of students was given one of the two instruments prior to field testing and the remaining students were given a second. A similar pattern was used at the termination of field testing of the module. The instruments used and the type of administration are shown in Table 2.

TABLE 2
Evaluation Instruments Used in the Formative Evaluation of KNOWING, a Level III Human Sciences Module

Date	Instrument	Students
April 4, 1977	Knowing Pretest, 44 items	50 percent random sample, each class
	How Is Your Logic? Forms A & B, 13 items, each form	50 percent random sample, each class
April 5 to end of school year	Problems to Solve, 1 to 5 problems per activity	Each student, specific problems for each activity studied
	Activity Evaluation Form 8 Likert scale items plus 3 essay problems	Each student, one form per each activity studied
Third week of May	Knowing Posttest, 44 items	50 percent random sample, each class
	Science Questionnaire, rank order of classes 18 bipolar adjectives, Human Sciences 18 bipolar adjectives, Regular Science	50 percent random sample, each class

A 44 item KNOWING pre-test and posttest were designed to control for prior knowledge of key ideas developed in the KNOWING Module. The tests contained the same items, with the items or item groups reordered from one instrument to the other. Both instruments consisted of two sections: a 35 item set of statements to be marked either agree or disagree and a nine item multiple choice section with four choices per item. The agree or disagree section included three groups of items related to an expository section, and 14 unrelated items. Each of the multiple choice items was independent of the others.

How Is Your Logic? 1976 edition, was a 26 item two form (Form A and B) test of logical competence. This test had been used and

validated during the three-year Human Sciences field test. It was used to be able to compare the eighth grade group testing the KNOWING Module with the eighth graders at the end of three years of Human Sciences in terms of logical competence.

The Science Questionnaire was also used in the three-year field test of Human Sciences. This instrument was used to determine student attitudes, again to enable a comparison to be made with the three-year field test group (Robinson, 1980). This instrument contained two semantic differential scales, each with 18 bipolar adjective pairs. Conceptually, the adjective pairs were designed to measure four aspects of attitude: evaluation, value, activity, and judgment. The Science Questionnaire also had a section asking students to list and then to rank order all classes they were enrolled in during the year.

When students completed an activity they had chosen, they were to complete two forms. First, an Activity Evaluation Form, prepared on an optical scanning sheet for use with all activities in KNOWING was to be completed. The form asked for the activity title, time spent in and out of class on the activity, answers to eight Likert-type statements, and three open-ended essay problems.

A second activity specific instrument, "Problems to Solve," was a quiz of from one to four items developed specifically for the activity chosen. The items were a mixture of objectively-scored and essay problems. Scoring keys and suggestions for scoring were provided to the field test teachers for their use in evaluating student achievement.

Codebook Variables

Eight variables are grouped as identification variables in the codebook. Each school was assigned a school number variable (SCHL). Teacher numbers and student numbers, sex of the student, age in months of the student as of April 1977, and the ethnic background of the student, were also coded and stored. Two school descriptors were used (SCHLORG), the school organization variable indicates whether the school was a middle school, grade six, seven, and eight, or a junior high school, grades seven, eight, and nine. The variable SCHLSITE indicates the demographic location of the school, urban, intercity, suburban, and rural. Identification variables begin on page 1 of the codebook and end on page 27. Year of birth (YOB), month of birth (MOB), and day of birth (DOB) are provided on page 28 and 29 of the codebook.

Values for the thirteen variables in the How Is Your Logic instrument are provided from pages 29 to 35 of the codebook. These items were scored using the scoring criteria developed by Gray (1981). Each item was scored according to the operational characteristic of the response of each student. These criteria were the same as those used for scoring How Is Your Logic? in the three-year field test of Human Sciences.

Student responses to the Problems to Solve instruments that were specific to each activity begin on page 42 and continue through page 109 of the codebook. These Problems to Solve are listed by variables that are the title of each of the 43 activities that were tested in the KNOWING Module. No data were gathered on the all-class activity, Ways of Knowing. Some of the essay questions had responses that were coded as more than one item. Variables such as FOSSIL3A and FOSSIL3B indicate that item 3 had responses coded into two variables. These scoring protocols could not be given completely, due to the limitations of the SPSS label system. As previously indicated, the complete presentation of every test item used in testing the KNOWING Module and the complete descriptions of all coding protocols are available in Robinson (1981). The number of valid cases for the items for each activity indicate the number of students who chose that activity and who also completed a Problems to Solve quiz form. Some value codes were not used for some items within this group of variables. Such omissions indicate that there was no coding protocol developed for that particular number. The value code seven, labeled blank, indicates that a student responded to at least one problem on the Problems to Solve sheet, but left the response to this particular item blank. Missing values indicate students who did not choose to do that particular activity. Valid cases indicate the number of students who chose the activity.

Students were asked to list each course they were taking during the spring semester, 1977, and then to rank order those courses by assigning one to the class they liked best, two to the next best, etc. Students were instructed that their ranking was comparative and did not indicate whether they liked any class or disliked any class but only to give the order of how they viewed their various classes on a comparative basis. The variable SCIRANK indicates the rank for the Human Sciences Module KNOWING. The value codes indicate ranking this variable first, second, third, etc., in comparison to other courses. Student rank orders of class preference begin on page 110 and terminate on page 121.

As with the items on How Is Your Logic?, all items obtained from the Science Questionnaire, including rank order, were obtained only for a fifty percent random sample of the students in test classes. Values for the semantic differential scale measuring the concept "How do you feel about Human Sciences?" begin with variable HS1, page 122, and terminate with variable HS18, page 130. The bipolar adjectives are listed as value one and value seven. Opposite value one is the bipolar adjective that was scored one, the lowest score given, and opposite value seven appears the adjective scored highest value, seven. The instrument itself had a midpoint of zero and values one, two, and three proceeding from left to right and right to left from the zero point. Values for the semantic differential title "How do you feel about regular science?" begin on page 131 and end on page 139. High and low scored items are shown in the same way as they were for the previous 18 bipolar adjectives. Values for the 44 items on the posttest begin on page 140 and terminate on page 155 of the codebook.

Data Processing and Clean Up

Student responses from the KNOWING pre-test and posttest were obtained directly from student responses marked on the test booklets. Data from these two instruments and from the Science Questionnaire were coded by secretarial personnel onto optical scanning sheets and converted into cards. Student responses from "How is Your Logic?" were coded by Dr. William Gray directly from the student consumable test booklets. Data were provided to the project on a data tape in SPSS format.

Student responses to each Problem to Solve, the activity specific quiz, were coded by the principal investigator and converted into cards by secretarial personnel marking the code responses onto optical scanning sheets.

Each student case record consisted of seven data cards with data cards interfiled by student case. Cards were listed and checked for data errors by computing frequencies using the SPSS Frequencies program, "General" option. Outlying data were located and checked with original records to rectify inconsistencies. Of the 539 students enrolled in test classes during the ten to eleven week field test period, 442 cases were retained for the data file. Table 3 shows the total number of students who were reported by teachers to be enrolled in test classes at some time during the test period and the number dropped for reasons of insufficient data.

TABLE 3
Number of students by school and teacher in test classes in the KNOWING data file

		NUMBER OF STUDENTS			
SCHOOL	TEACHER	TOTAL	DATA FILE	DROP	PERCENT DROP
14	01	53	45	8	15.1
14	06	60	56	4	6.7
16	04	31	23	8	25.8
17	07	33	9	24	72.7
19	02	27	24	3	11.1
21	03	23	19	4	17.4
22	05	63	48	15	23.8
23	08	48	47	1	2.1
23	09	31	13	18	58.1
24	10	25	25	0	0.0
25	11	37	33	4	10.8
26	12	25	20	5	20.0
27	13	26	26	0	0.0
28	14	57	54	3	5.3
ALL	ALL	539	442	97	18.0

The table shows that 18 percent of the students were dropped from the data file for reasons of too few data records. A student case was dropped if the student had data for only one or two of the five instruments used in the field test. Five teachers' test groups had deletions of 20 percent or more students. These data losses were probably due to lack of follow-through in administering instruments or in collecting or mailing instruments to the project office. Loss of cases in other classes was more likely due to student absence, turnover, or noncompletion of the particular instrument.

The KNOWING data file contains records for 442 students in 12 schools taught by 14 teachers. Data from two test teacher classes contain less than 50 percent of the students enrolled (see Table 3). Reliability estimates of each of the four major instruments used in the field test of KNOWING are shown in Table 4.

TABLE 4
Reliability estimates of four KNOWING Module instruments

INSTRUMENT	NUMBER OF STUDENTS	NUMBER OF ITEMS	REI IABILITY
KNOWING Pretest	280	44	.67*
How is Your Logic?	222	26	.84**
KNOWING Posttest	282	44	.75*
Semantic Differential			
Human Sciences			
Evaluation	268	5	.84***
Value	268	5	.80***
Activity	268	5	.72***
Interest	268	3	.84***
Regular Science			
Evaluation	268	5	.91***
Value	268	5	.87***
Activity	268	5	.82***
Interest	268	3	.88***

* Hoyt analysis of variance
** Cronbach's alpha
*** KR-20

The KNOWING Module Activity Evaluation File KNOWACT

The Activity Evaluation Form previously mentioned was not presented in the previous discussion because it could not be included in the HSPKNOW Codebook without making the Codebook unwieldy. The Activity Evaluation File, KNOWACT, used the activity as the case rather than the student as the case. This was done to eliminate the large amount of unused tape space if the evaluation file had been included as a part of student cases in the HSPKNOW file. This file can be used in conjunction with the file HSPKNOW, as will be shown in the discussion below.

The Codebook Contents for KNOWACT appears at the end of this section. The structure of the file is repetitive, with 43 cases representing the 43 activities that were field tested in the KNOWING Module. It is repetitive in that each of the 43 cases contains the same variables. The first five variables within each activity case are identifying variables. Each activity is coded with an activity number that corresponds to the activity number assigned in the Problems to Solve section of the file HSPKNOW. Similarly, school number, teacher number, student number, and sex of student are repetitions of the identifying variables in the HSPKNOW file. Because these identification numbers are the same, the data from any particular student in the KNOWACT file can be interrelated with that student's data in the HSPKNOW file.

Following the identifying variables, which appear on pages 1 to 3 of the codebook, are two variables indicating the amount of time it took students to do the activity. These two variables are PERIODS and OUTCLASS. PERIODS indicates the number of class periods spent on the activity while OUTCLASS shows the number of hours spent on the activity outside of class. These two variables appear on page 4 of the codebook. The next eight variables in the codebook--enjoy, difficult, think, long, import, useful, knew, and recmnd--are responses to eight Likert-scale items. These variables begin on page 5.

Responses to the first essay item were coded into cognitive, attitudinal, and logistic responses. Attitudinal responses were those responses that indicated likes or dislikes. Cognitive responses were those that gave a content-specific reason in the response. Logistic responses were those that indicated what the student did, such as making something, interviewing someone, or conducting the activity. Responses to these three variables appear on page 9 and 10 of the codebook. The variable, LEARNED, gives the coded responses to a second essay problem, and the variable COMMENT gives coded responses to additional comments made by the student on the Activity Evaluation Form. The pages given in the discussion above refer to the pages for which the various variables appear for the first activity in the KNOWACT codebook, Strange Fossil. The Activity Evaluation Form was a generalized form to use for every activity the student chose. The variables, as described for Strange Fossil above, are repeated for each of the remaining 42 activities, beginning with Time Travel on page 11 and ending with the activity, The Storm, which begins on page 440, and terminating on page 450 of the codebook. The codebook contents for KNOWACT that follows gives precise pages for the variables for each of the 43 activities contained in this file.

Codebook Contents, KNOWACT

		Page
Strange Fossil		
ACTVTYNO	Activity Number	1
SCHOOL	School Number	1
TEACHER	Teacher Number	2
STUDENT	Student Number	3
SEX	Sex of Student	3
PERIODS	Class Periods Spent on Activity	4
OUTCLASS	Hours Spent on Activity Outside of Class	4
ENJOY	Activity Was Enjoyable	5
DIFFICULT	Activity Was Difficult	5
THINK	Activity Made Me Think	6
LONG	Activity Was Too Long	6
IMPORT	Activity Was Important to Me	7
USEFUL	Learned Useful Things	7
KNEW	Already Knew Most Things	8
RECMND	Would Recommend This Activity	8
ATTITUDE	Chose Activity Because--Attitude	9
COGNITIV	Chose Activity Because--Cognitive	9
LOGISTIC	Chose Activity Because--Logistic	10
LEARNED	The Most Important Thing I Learned Was	10
COMMENT	Comments on Activity	11
Time Travel		11
ACTVTYNO	Activity Number	11
SCHOOL	School Number	12
TEACHER	Teacher Number	12
STUDENT	Student Number	13
SEX	Sex of Student	13
PERIODS	Class Periods Spent on Activity	14
OUTCLASS	Hours Spent on Activity Outside of Class	14
ENJOY	Activity Was Enjoyable	15
DIFFICULT	Activity Was Difficult	15
THINK	Activity Made Me Think	16
LONG	Activity Was Too Long	16
IMPORT	Activity Was Important to Me	17
USEFUL	Learned Useful Things	17
KNEW	Already Knew Most Things	18
RECMND	Would Recommend This Activity	18
ATTITUDE	Chose Activity Because--Attitude	19
COGNITIV	Chose Activity Because--Cognitive	19
LOGISTIC	Chose Activity Because--Logistic	20
LEARNED	The Most Important Thing I Learned Was	20
COMMENT	Comments on Activity	21
Counting With Carbon		21
ACTVTYNO	Activity Number	21
SCHOOL	School Number	22
TEACHER	Teacher Number	22
STUDENT	Student Number	23
SEX	Sex of Student	23
PERIODS	Class Periods Spent on Activity	24
OUTCLASS	Hours Spent on Activity Outside of Class	24

ENJOY	Activity Was Enjoyable	25
DIFFICULT	Activity Was Difficult	25
THINK	Activity Made Me Think	26
LONG	Activity Was Too Long	26
IMPORT	Activity Was Important to Me	27
USEFUL	Learned Useful Things	27
KNEW	Already Knew Most Things	28
RECMND	Would Recommend This Activity	28
ATTITUDE	Chose Activity Because--Attitude	29
COGNITIV	Chose Activity Because--Cognitive	29
LOGISTIC	Chose Activity Because--Logistic	30
LEARNED	The Most Important Thing I Learned Was	30
COMMENT	Comments on Activity	31
Rosetta II		31
ACTVTYNO	Activity Number	31
SCHOOL	School Number	32
TEACHER	Teacher Number	33
STUDENT	Student Number	34
SEX	Sex of Student	34
PERIODS	Class Periods Spent on Activity	35
OUTCLASS	Hours Spent on Activity Outside of Class	35
ENJOY	Activity Was Enjoyable	36
DIFFICULT	Activity Was Difficult	36
THINK	Activity Made Me Think	37
LONG	Activity Was Too Long	37
IMPORT	Activity Was Important to Me	38
USEFUL	Learned Useful Things	38
KNEW	Already Knew Most Things	39
RECMND	Would Recommend This Activity	39
ATTITUDE	Chose Activity Because--Attitude	40
COGNITIV	Chose Activity Because--Cognitive	40
LOGISTIC	Chose Activity Because--Logistic	41
LEARNED	The Most Important Thing I Learned Was	41
COMMENT	Comments on Activity	42
Where Did I Come From?		42
ACTVTYNO	Activity Number	42
SCHOOL	School Number	43
TEACHER	Teacher Number	43
STUDENT	Student Number	44
SEX	Sex of Student	44
PERIODS	Class Periods Spent on Activity	45
OUTCLASS	Hours Spent on Activity Outside of Class	45
ENJOY	Activity Was Enjoyable	46
DIFFICULT	Activity Was Difficult	46
THINK	Activity Made Me Think	47
LONG	Activity Was Too Long	47
IMPORT	Activity Was Important to Me	48
USEFUL	Learned Useful Things	48
KNEW	Already Knew Most Things	49
RECMND	Would Recommend This Activity	49
ATTITUDE	Chose Activity Because--Attitude	50
COGNITIV	Chose Activity Because--Cognitive	50

LOGISTIC	Chose Activity Because--Logistic	51
LEARNED	The Most Important Thing I Learned Was	51
COMMENT	Comments on Activity	52
Patterns in Your Past		52
ACTVTYNO	Activity Number	52
SCHOOL	School Number	53
TEACHER	Teacher Number	54
STUDENT	Student Number	54
SEX	Sex of Student	55
PERIODS	Class Periods Spent on Activity	55
OUTCLASS	Hours Spent on Activity Outside of Class	56
ENJOY	Activity Was Enjoyable	56
DIFFICULT	Activity Was Difficult	57
THINK	Activity Made Me Think	57
LONG	Activity Was Too Long	58
IMPORT	Activity Was Important to Me	58
USEFUL	Learned Useful Things	59
KNEW	Already Knew Most Things	59
RECMND	Would Recommend This Activity	60
ATTITUDE	Chose Activity Because--Attitude	60
COGNITIV	Chose Activity Because--Cognitive	61
LOGISTIC	Chose Activity Because--Logistic	61
LEARNED	The Most Important Thing I Learned Was	62
COMMENT	Comments on Activity	62
Pueblo People		63
ACTVTYNO	Activity Number	63
SCHOOL	School Number	63
TEACHER	Teacher Number	64
STUDENT	Student Number	64
SEX	Sex of Student	65
PERIODS	Class Periods Spent on Activity	65
OUTCLASS	Hours Spent on Activity Outside of Class	66
ENJOY	Activity Was Enjoyable	66
DIFFICULT	Activity Was Difficult	67
THINK	Activity Made Me Think	67
LONG	Activity Was Too Long	68
IMPORT	Activity Was Important to Me	68
USEFUL	Learned Useful Things	69
KNEW	Already Knew Most Things	69
RECMND	Would Recommend This Activity	70
ATTITUDE	Chose Activity Because--Attitude	70
COGNITIV	Chose Activity Because--Cognitive	71
LOGISTIC	Chose Activity Because--Logistic	71
LEARNED	The Most Important Thing I Learned Was	72
COMMENT	Comments on Activity	72
Solar Merry Go Round		73
ACTVTYNO	Activity Number	73
SCHOOL	School Number	73
TEACHER	Teacher Number	74
STUDENT	Student Number	74
SEX	Sex of Student	75

PERIODS	Class Periods Spent on Activity	75
OUTCLASS	Hours Spent on Activity Outside of Class	76
ENJOY	Activity Was Enjoyable	76
DIFFICULT	Activity Was Difficult	77
THINK	Activity Made Me Think	77
LONG	Activity Was Too Long	78
IMPORT	Activity Was Important to Me	78
USEFUL	Learned Useful Things	79
KNEW	Already Knew Most Things	79
RECMND	Would Recommend This Activity	80
ATTITUDE	Chose Activity Because--Attitude	80
COGNITIV	Chose Activity Because--Cognitive	81
LOGISTIC	Chose Activity Because--Logistic	81
LEARNED	The Most Important Thing I Learned Was	82
COMMENT	Comments on Activity	82
Sun Watch		83
ACTVTYNO	Activity Number	83
SCHOOL	School Number	83
TEACHER	Teacher Number	84
STUDENT	Student Number	85
SEX	Sex of Student	85
PERIODS	Class Periods Spent on Activity	86
OUTCLASS	Hours Spent on Activity Outside of Class	86
ENJOY	Activity Was Enjoyable	87
DIFFICULT	Activity Was Difficult	87
THINK	Activity Made Me Think	88
LONG	Activity Was Too Long	88
IMPORT	Activity Was Important to Me	89
USEFUL	Learned Useful Things	89
KNEW	Already Knew Most Things	90
RECMND	Would Recommend This Activity	90
ATTITUDE	Chose Activity Because--Attitude	91
COGNITIV	Chose Activity Because--Cognitive	91
LOGISTIC	Chose Activity Because--Logistic	92
LEARNED	The Most Important Thing I Learned Was	92
COMMENT	Comments on Activity	93
The Star Gazers		93
ACTVTYNO	Activity Number	93
SCHOOL	School Number	94
TEACHER	Teacher Number	95
STUDENT	Student Number	96
SEX	Sex of Student	96
PERIODS	Class Periods Spent on Activity	97
OUTCLASS	Hours Spent on Activity Outside of Class	97
ENJOY	Activity Was Enjoyable	98
DIFFICULT	Activity Was Difficult	98
THINK	Activity Made Me Think	99
LONG	Activity Was Too Long	99
IMPORT	Activity Was Important to Me	100
USEFUL	Learned Useful Things	100
KNEW	Already Knew Most Things	101
RECMND	Would Recommend This Activity	101

ATTITUDE	Chose Activity Because--Attitude	102
COGNITIV	Chose Activity Because--Cognitive	102
LOGISTIC	Chose Activity Because--Logistic	103
LEARNED	The Most Important Thing I Learned Was	103
COMMENT	Comments on Activity	104
What Do Stars Know?		104
ACTVTYNO	Activity Number	104
SCHOOL	School Number	105
TEACHER	Teacher Number	106
STUDENT	Student Number	107
SEX	Sex of Student	107
PERIODS	Class Periods Spent on Activity	108
OUTCLASS	Hours Spent on Activity Outside of Class	108
ENJOY	Activity Was Enjoyable	109
DIFFICULT	Activity Was Difficult	109
THINK	Activity Made Me Think	110
LONG	Activity Was Too Long	110
IMPORT	Activity Was Important to Me	111
USEFUL	Learned Useful Things	111
KNEW	Already Knew Most Things	112
RECMND	Would Recommend This Activity	112
ATTITUDE	Chose Activity Because--Attitude	113
COGNITIV	Chose Activity Because--Cognitive	113
LOGISTIC	Chose Activity Because--Logistic	114
LEARNED	The Most Important Thing I Learned Was	114
COMMENT	Comments on Activity	115
Human Ideas--Disease		115
ACTVTYNO	Activity Number	115
SCHOOL	School Number	116
TEACHER	Teacher Number	117
STUDENT	Student Number	117
SEX	Sex of Student	118
PERIODS	Class Periods Spent on Activity	118
OUTCLASS	Hours Spent on Activity Outside of Class	119
ENJOY	Activity Was Enjoyable	119
DIFFICULT	Activity Was Difficult	120
THINK	Activity Made Me Think	120
LONG	Activity Was Too Long	121
IMPORT	Activity Was Important to Me	121
USEFUL	Learned Useful Things	122
KNEW	Already Knew Most Things	122
RECMND	Would Recommend This Activity	123
ATTITUDE	Chose Activity Because--Attitude	123
COGNITIV	Chose Activity Because--Cognitive	124
LOGISTIC	Chose Activity Because--Logistic	124
LEARNED	The Most Important Thing I Learned Was	125
COMMENT	Comments on Activity	125
Farther and Faster		126
ACTVTYNO	Activity Number	126
SCHOOL	School Number	126
TEACHER	Teacher Number	126
STUDENT	Student Number	127

SEX	Sex of Student	128
PERIODS	Class Periods Spent on Activity	129
OUTCLASS	Hours Spent on Activity Outside of Class	129
ENJOY	Activity Was Enjoyable	130
DIFFICULT	Activity Was Difficult	130
THINK	Activity Made Me Think	131
LONG	Activity Was Too Long	131
IMPORT	Activity Was Important to Me	132
USEFUL	Learned Useful Things	132
KNEW	Already Knew Most Things	133
RECMND	Would Recommend This Activity	133
ATTITUDE	Chose Activity Because--Attitude	134
COGNITIV	Chose Activity Because--Cognitive	134
LOGISTIC	Chose Activity Because--Logistic	135
LEARNED	The Most Important Thing I Learned Was	135
COMMENT	Comments on Activity	136
Hot Spit		136
ACTVTYNO	Activity Number	136
SCHOOL	School Number	137
TEACHER	Teacher Number	137
STUDENT	Student Number	138
SEX	Sex of Student	138
PERIODS	Class Periods Spent on Activity	139
OUTCLASS	Hours Spent on Activity Outside of Class	139
ENJOY	Activity Was Enjoyable	140
DIFFICULT	Activity Was Difficult	140
THINK	Activity Made Me Think	141
LONG	Activity Was Too Long	141
IMPORT	Activity Was Important to Me	142
USEFUL	Learned Useful Things	142
KNEW	Already Knew Most Things	143
RECMND	Would Recommend This Activity	143
ATTITUDE	Chose Activity Because--Attitude	144
COGNITIV	Chose Activity Because--Cognitive	144
LOGISTIC	Chose Activity Because--Logistic	145
LEARNED	The Most Important Thing I Learned Was	145
COMMENT	Comments on Activity	146
Levers of the Body		146
ACTVTYNO	Activity Number	146
SCHOOL	School Number	147
TEACHER	Teacher Number	147
STUDENT	Student Number	148
SEX	Sex of Student	148
PERIODS	Class Periods Spent on Activity	149
OUTCLASS	Hours Spent on Activity Outside of Class	149
ENJOY	Activity Was Enjoyable	150
DIFFICULT	Activity Was Difficult	150
THINK	Activity Made Me Think	151
LONG	Activity Was Too Long	151
IMPORT	Activity Was Important to Me	152
USEFUL	Learned Useful Things	152
KNEW	Already Knew Most Things	153
RECMND	Would Recommend This Activity	153

ATTITUDE	Chose Activity Because--Attitude	154
COGNITIV	Chose Activity Because--Cognitive	154
LOGISTIC	Chose Activity Because--Logistic	155
LEARNED	The Most Important Thing I Learned Was	155
COMMENT	Comments on Activity	156
Knowing About Brain		156
ACTVTYNO	Activity Number	156
SCHOOL	School Number	157
TEACHER	Teacher Number	158
STUDENT	Student Number	158
SEX	Sex of Student	159
PERIODS	Class Periods Spent on Activity	159
OUTCLASS	Hours Spent on Activity Outside of Class	160
ENJOY	Activity Was Enjoyable	160
DIFFICULT	Activity Was Difficult	161
THINK	Activity Made Me Think	161
LONG	Activity Was Too Long	162
IMPORT	Activity Was Important to Me	162
USEFUL	Learned Useful Things	163
KNEW	Already Knew Most Things	163
RECMND	Would Recommend This Activity	164
ATTITUDE	Chose Activity Because--Attitude	164
COGNITIV	Chose Activity Because--Cognitive	165
LOGISTIC	Chose Activity Because--Logistic	165
LEARNED	The Most Important Thing I Learned Was	166
COMMENT	Comments on Activity	166
Seeing Inside Body		167
ACTVTYNO	Activity Number	167
SCHOOL	School Number	167
TEACHER	Teacher Number	168
STUDENT	Student Number	169
SEX	Sex of Student	169
PERIODS	Class Periods Spent on Activity	170
OUTCLASS	Hours Spent on Activity Outside of Class	170
ENJOY	Activity Was Enjoyable	171
DIFFICULT	Activity Was Difficult	171
THINK	Activity Made Me Think	172
LONG	Activity Was Too Long	172
IMPORT	Activity Was Important to Me	173
USEFUL	Learned Useful Things	173
KNEW	Already Knew Most Things	174
RECMND	Would Recommend This Activity	174
ATTITUDE	Chose Activity Because--Attitude	175
COGNITIV	Chose Activity Because--Cognitive	175
LOGISTIC	Chose Activity Because--Logistic	176
LEARNED	The Most Important Thing I Learned Was	176
COMMENT	Comments on Activity	177
Building With Bricks		177
ACTVTYNO	Activity Number	177
SCHOOL	School Number	178
TEACHER	Teacher Number	179
STUDENT	Student Number	180

SEX	Sex of Student	180
PERIODS	Class Periods Spent on Activity	181
OUTCLASS	Hours Spent on Activity Outside of Class	181
ENJOY	Activity Was Enjoyable	182
DIFFICULT	Activity Was Difficult	182
THINK	Activity Made Me Think	183
LONG	Activity Was Too Long	183
IMPORT	Activity Was Important to Me	184
USEFUL	Learned Useful Things	184
KNEW	Already Knew Most Things	185
RECMND	Would Recommend This Activity	185
ATTITUDE	Chose Activity Because--Attitude	186
COGNITIV	Chose Activity Because--Cognitive	186
LOGISTIC	Chose Activity Because--Logistic	187
LEARNED	The Most Important Thing I Learned Was	187
COMMENT	Comments on Activity	188
Foiled Again		188
ACTVTYNO	Activity Number	188
SCHOOL	School Number	189
TEACHER	Teacher Number	190
STUDENT	Student Number	191
SEX	Sex of Student	191
PERIODS	Class Periods Spent on Activity	192
OUTCLASS	Hours Spent on Activity Outside of Class	192
ENJOY	Activity Was Enjoyable	193
DIFFICULT	Activity Was Difficult	193
THINK	Activity Made Me Think	194
LONG	Activity Was Too Long	194
IMPORT	Activity Was Important to Me	195
USEFUL	Learned Useful Things	195
KNEW	Already Knew Most Things	196
RECMND	Would Recommend This Activity	196
ATTITUDE	Chose Activity Because--Attitude	197
COGNITIV	Chose Activity Because--Cognitive	197
LOGISTIC	Chose Activity Because--Logistic	198
LEARNED	The Most Important Thing I Learned Was	198
COMMENT	Comments on Activity	199
Materials in Space		199
ACTVTYNO	Activity Number	199
SCHOOL	School Number	200
TEACHER	Teacher Number	201
STUDENT	Student Number	202
SEX	Sex of Student	202
PERIODS	Class Periods Spent on Activity	203
OUTCLASS	Hours Spent on Activity Outside of Class	203
ENJOY	Activity Was Enjoyable	204
DIFFICULT	Activity Was Difficult	204
THINK	Activity Made Me Think	205
LONG	Activity Was Too Long	205
IMPORT	Activity Was Important to Me	206
USEFUL	Learned Useful Things	206
KNEW	Already Knew Most Things	207
RECMND	Would Recommend This Activity	207

ATTITUDE	Chose Activity Because--Attitude	208
COGNITIV	Chose Activity Because--Cognitive	208
LOGISTIC	Chose Activity Because--Logistic	209
LEARNED	The Most Important Thing I Learned Was	209
COMMENT	Comments on Activity	210
Bldg Mtrls--How Good Are They?		210
ACTVTYNO	Activity Number	210
SCHOOL	School Number	211
TEACHER	Teacher Number	211
STUDENT	Student Number	212
SEX	Sex of Student	212
PERIODS	Class Periods Spent on Activity	212
OUTCLASS	Hours Spent on Activity Outside of Class	213
ENJOY	Activity Was Enjoyable	213
DIFFICULT	Activity Was Difficult	214
THINK	Activity Made Me Think	214
LONG	Activity Was Too Long	215
IMPORT	Activity Was Important to Me	215
USEFUL	Learned Useful Things	216
KNEW	Already Knew Most Things	216
RECMND	Would Recommend This Activity	217
ATTITUDE	Chose Activity Because--Attitude	217
COGNITIV	Chose Activity Because--Cognitive	218
LOGISTIC	Chose Activity Because--Logistic	218
LEARNED	The Most Important Thing I Learned Was	219
COMMENT	Comments on Activity	219
Images--Brush and Pen		220
ACTVTYNO	Activity Number	220
SCHOOL	School Number	220
TEACHER	Teacher Number	221
STUDENT	Student Number	222
SEX	Sex of Student	222
PERIODS	Class Periods Spent on Activity	223
OUTCLASS	Hours Spent on Activity Outside of Class	223
ENJOY	Activity Was Enjoyable	224
DIFFICULT	Activity Was Difficult	224
THINK	Activity Made Me Think	225
LONG	Activity Was Too Long	225
IMPORT	Activity Was Important to Me	226
USEFUL	Learned Useful Things	226
KNEW	Already Knew Most Things	227
RECMND	Would Recommend This Activity	227
ATTITUDE	Chose Activity Because--Attitude	228
COGNITIV	Chose Activity Because--Cognitive	228
LOGISTIC	Chose Activity Because--Logistic	229
LEARNED	The Most Important Thing I Learned Was	229
COMMENT	Comments on Activity	230
How Old Are They?		230
ACTVTYNO	Activity Number	230
SCHOOL	School Number	231
TEACHER	Teacher Number	232
STUDENT	Student Number	233

SEX	Sex of Student	233
PERIODS	Class Periods Spent on Activity	234
OUTCLASS	Hours Spent on Activity Outside of Class	234
ENJOY	Activity Was Enjoyable	235
DIFFICULT	Activity Was Difficult	235
THINK	Activity Made Me Think	236
LONG	Activity Was Too Long	236
IMPORT	Activity Was Important to Me	237
USEFUL	Learned Useful Things	237
KNEW	Already Knew Most Things	238
RECMND	Would Recommend This Activity	238
ATTITUDE	Chose Activity Because--Attitude	239
COGNITIV	Chose Activity Because--Cognitive	239
LOGISTIC	Chose Activity Because--Logistic	240
LEARNED	The Most Important Thing I Learned Was	240
COMMENT	Comments on Activity	241
The Unknown Millions		241
ACTVTYNO	Activity Number	241
SCHOOL	School Number	242
TEACHER	Teacher Number	243
STUDENT	Student Number	243
SEX	Sex of Student	244
PERIODS	Class Periods Spent on Activity	244
OUTCLASS	Hours Spent on Activity Outside of Class	245
ENJOY	Activity Was Enjoyable	245
DIFFICULT	Activity Was Difficult	246
THINK	Activity Made Me Think	246
LONG	Activity Was Too Long	247
IMPORT	Activity Was Important to Me	247
USEFUL	Learned Useful Things	248
KNEW	Already Knew Most Things	248
RECMND	Would Recommend This Activity	249
ATTITUDE	Chose Activity Because--Attitude	249
COGNITIV	Chose Activity Because--Cognitive	250
LOGISTIC	Chose Activity Because--Logistic	250
LEARNED	The Most Important Thing I Learned Was	251
COMMENT	Comments on Activity	251
Vital Statistics		252
ACTVTYNO	Activity Number	252
SCHOOL	School Number	252
TEACHER	Teacher Number	253
STUDENT	Student Number	253
SEX	Sex of Student	254
PERIODS	Class Periods Spent on Activity	254
OUTCLASS	Hours Spent on Activity Outside of Class	255
ENJOY	Activity Was Enjoyable	255
DIFFICULT	Activity Was Difficult	256
THINK	Activity Made Me Think	256
LONG	Activity Was Too Long	257
IMPORT	Activity Was Important to Me	257
USEFUL	Learned Useful Things	258
KNEW	Already Knew Most Things	258
RECMND	Would Recommend This Activity	259

ATTITUDE	Chose Activity Because--Attitude	259
COGNITIV	Chose Activity Because--Cognitive	260
LOGISTIC	Chose Activity Because--Logistic	260
LEARNED	The Most Important Thing I Learned Was	261
COMMENT	Comments on Activity	261
Very Different Ones		262
ACTVTYNO	Activity Number	262
SCHOOL	School Number	262
TEACHER	Teacher Number	263
STUDENT	Student Number	263
SEX	Sex of Student	264
PERIODS	Class Periods Spent on Activity	264
OUTCLASS	Hours Spent on Activity Outside of Class	265
ENJOY	Activity Was Enjoyable	265
DIFFICULT	Activity Was Difficult	266
THINK	Activity Made Me Think	266
LONG	Activity Was Too Long	267
IMPORT	Activity Was Important to Me	267
USEFUL	Learned Useful Things	268
KNEW	Already Knew Most Things	268
RECMND	Would Recommend This Activity	269
ATTITUDE	Chose Activity Because--Attitude	269
COGNITIV	Chose Activity Because--Cognitive	270
LOGISTIC	Chose Activity Because--Logistic	270
LEARNED	The Most Important Thing I Learned Was	271
COMMENT	Comments on Activity	271
Surveys, Samples, Scls		272
ACTVTYNO	Activity Number	272
SCHOOL	School Number	272
TEACHER	Teacher Number	273
STUDENT	Student Number	273
SEX	Sex of Student	274
PERIODS	Class Periods Spent on Activity	274
OUTCLASS	Hours Spent on Activity Outside of Class	275
ENJOY	Activity Was Enjoyable	275
DIFFICULT	Activity Was Difficult	276
THINK	Activity Made Me Think	276
LONG	Activity Was Too Long	277
IMPORT	Activity Was Important to Me	277
USEFUL	Learned Useful Things	278
KNEW	Already Knew Most Things	278
RECMND	Would Recommend This Activity	279
ATTITUDE	Chose Activity Because--Attitude	279
COGNITIV	Chose Activity Because--Cognitive	280
LOGISTIC	Chose Activity Because--Logistic	280
LEARNED	The Most Important Thing I Learned Was	281
COMMENT	Comments on Activity	281
Size Wise		282
ACTVTYNO	Activity Number	282
SCHOOL	School Number	282
TEACHER	Teacher Number	283
STUDENT	Student Number	284

SEX	Sex of Student	284
PERIODS	Class Periods Spent on Activity	285
OUTCLASS	Hours Spent on Activity Outside of Class	285
ENJOY	Activity Was Enjoyable	286
DIFFICULT	Activity Was Difficult	286
THINK	Activity Made Me Think	287
LONG	Activity Was Too Long	287
IMPORT	Activity Was Important to Me	288
USEFUL	Learned Useful Things	288
KNEW	Already Knew Most Things	289
RECMND	Would Recommend This Activity	289
ATTITUDE	Chose Activity Because--Attitude	290
COGNITIV	Chose Activity Because--Cognitive	290
LOGISTIC	Chose Activity Because--Logistic	291
LEARNED	The Most Important Thing I Learned Was	291
COMMENT	Comments on Activity	292

Knowing Yourself 292

ACTVTYNO	Activity Number	292
SCHOOL	School Number	293
TEACHER	Teacher Number	294
STUDENT	Student Number	295
SEX	Sex of Student	295
PERIODS	Class Periods Spent on Activity	296
OUTCLASS	Hours Spent on Activity Outside of Class	296
ENJOY	Activity Was Enjoyable	297
DIFFICULT	Activity Was Difficult	297
THINK	Activity Made Me Think	298
LONG	Activity Was Too Long	298
IMPORT	Activity Was Important to Me	299
USEFUL	Learned Useful Things	299
KNEW	Already Knew Most Things	300
RECMND	Would Recommend This Activity	300
ATTITUDE	Chose Activity Because--Attitude	301
COGNITIV	Chose Activity Because--Cognitive	301
LOGISTIC	Chose Activity Because--Logistic	302
LEARNED	The Most Important Thing I Learned Was	302
COMMENT	Comments on Activity	303

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ACTVTYNO	Activity Number	303
SCHOOL	School Number	304
TEACHER	Teacher Number	305
STUDENT	Student Number	306
SEX	Sex of Student	306
PERIODS	Class Periods Spent on Activity	307
OUTCLASS	Hours Spent on Activity Outside of Class	307
ENJOY	Activity Was Enjoyable	308
DIFFICULT	Activity Was Difficult	308
THINK	Activity Made Me Think	309
LONG	Activity Was Too Long	309
IMPORT	Activity Was Important to Me	310
USEFUL	Learned Useful Things	310
KNEW	Already Knew Most Things	311
RECMND	Would Recommend This Activity	311

ATTITUDE	Chose Activity Because--Attitude	312
COGNITIV	Chose Activity Because--Cognitive	312
LOGISTIC	Chose Activity Because--Logistic	313
LEARNED	The Most Important Thing I Learned Was	313
COMMENT	Comments on Activity	314
Martian Tales		314
ACTVTYNO	Activity Number	314
SCHOOL	School Number	315
TEACHER	Teacher Number	316
STUDENT	Student Number	317
SEX	Sex of Student	317
PERIODS	Class Periods Spent on Activity	318
OUTCLASS	Hours Spent on Activity Outside of Class	318
ENJOY	Activity Was Enjoyable	319
DIFFICULT	Activity Was Difficult	319
THINK	Activity Made Me Think	320
LONG	Activity Was Too Long	320
IMPORT	Activity Was Important to Me	321
USEFUL	Learned Useful Things	321
KNEW	Already Knew Most Things	322
RECMND	Would Recommend This Activity	322
ATTITUDE	Chose Activity Because--Attitude	323
COGNITIV	Chose Activity Because--Cognitive	323
LOGISTIC	Chose Activity Because--Logistic	324
LEARNED	The Most Important Thing I Learned Was	324
COMMENT	Comments on Activity	325
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ACTVTYNO	Activity Number	325
SCHOOL	School Number	326
TEACHER	Teacher Number	327
STUDENT	Student Number	328
SEX	Sex of Student	328
PERIODS	Class Periods Spent on Activity	329
OUTCLASS	Hours Spent on Activity Outside of Class	329
ENJOY	Activity Was Enjoyable	330
DIFFICULT	Activity Was Difficult	330
THINK	Activity Made Me Think	331
LONG	Activity Was Too Long	331
IMPORT	Activity Was Important to Me	332
USEFUL	Learned Useful Things	332
KNEW	Already Knew Most Things	333
RECMND	Would Recommend This Activity	333
ATTITUDE	Chose Activity Because--Attitude	334
COGNITIV	Chose Activity Because--Cognitive	334
LOGISTIC	Chose Activity Because--Logistic	335
LEARNED	The Most Important Thing I Learned Was	335
COMMENT	Comments on Activity	336
Moving Words		336
ACTVTYNO	Activity Number	336
SCHOOL	School Number	337
TEACHER	Teacher Number	338
STUDENT	Student Number	339

SEX	Sex of Student	339
PERIODS	Class Periods Spent on Activity	340
OUTCLASS	Hours Spent on Activity Outside of Class	340
ENJOY	Activity Was Enjoyable	341
DIFFICULT	Activity Was Difficult	341
THINK	Activity Made Me Think	342
LONG	Activity Was Too Long	342
IMPORT	Activity Was Important to Me	343
USEFUL	Learned Useful Things	343
KNEW	Already Knew Most Things	344
RECMND	Would Recommend This Activity	344
ATTITUDE	Chose Activity Because--Attitude	345
COGNITIV	Chose Activity Because--Cognitive	345
LOGISTIC	Chose Activity Because--Logistic	346
LEARNED	The Most Important Thing I Learned Was	346
COMMENT	Comments on Activity	347
Dancing Motion		347
ACTVTYNO	Activity Number	347
SCHOOL	School Number	348
TEACHER	Teacher Number	348
STUDENT	Student Number	349
SEX	Sex of Student	349
PERIODS	Class Periods Spent on Activity	350
OUTCLASS	Hours Spent on Activity Outside of Class	350
ENJOY	Activity Was Enjoyable	351
DIFFICULT	Activity Was Difficult	351
THINK	Activity Made Me Think	352
LONG	Activity Was Too Long	352
IMPORT	Activity Was Important to Me	353
USEFUL	Learned Useful Things	353
KNEW	Already Knew Most Things	354
RECMND	Would Recommend This Activity	354
ATTITUDE	Chose Activity Because--Attitude	355
COGNITIV	Chose Activity Because--Cognitive	355
LOGISTIC	Chose Activity Because--Logistic	356
LEARNED	The Most Important Thing I Learned Was	356
COMMENT	Comments on Activity	357
Vibes		357
ACTVTYNO	Activity Number	357
SCHOOL	School Number	358
TEACHER	Teacher Number	358
STUDENT	Student Number	359
SEX	Sex of Student	359
PERIODS	Class Periods Spent on Activity	360
OUTCLASS	Hours Spent on Activity Outside of Class	360
ENJOY	Activity Was Enjoyable	361
DIFFICULT	Activity Was Difficult	361
THINK	Activity Made Me Think	362
LONG	Activity Was Too Long	363
IMPORT	Activity Was Important to Me	363
USEFUL	Learned Useful Things	363
KNEW	Already Knew Most Things	364
RECMND	Would Recommend This Activity	364

ATTITUDE	Chose Activity Because--Attitude	365
COGNITIV	Chose Activity Because--Cognitive	365
LOGISTIC	Chose Activity Because--Logistic	366
LEARNED	The Most Important Thing I Learned Was	366
COMMENT	Comments on Activity	367
Rolling Along		367
ACTVTYNO	Activity Number	367
SCHOOL	School Number	368
TEACHER	Teacher Number	369
STUDENT	Student Number	370
SEX	Sex of Student	370
PERIODS	Class Periods Spent on Activity	371
OUTCLASS	Hours Spent on Activity Outside of Class	371
ENJOY	Activity Was Enjoyable	372
DIFFICULT	Activity Was Difficult	372
THINK	Activity Made Me Think	373
LONG	Activity Was Too Long	373
IMPORT	Activity Was Important to Me	374
USEFUL	Learned Useful Things	374
KNEW	Already Knew Most Things	375
RECMND	Would Recommend This Activity	375
ATTITUDE	Chose Activity Because--Attitude	376
COGNITIV	Chose Activity Because--Cognitive	376
LOGISTIC	Chose Activity Because--Logistic	377
LEARNED	The Most Important Thing I Learned Was	377
COMMENT	Comments on Activity	378
Heavenly Motion		378
ACTVTYNO	Activity Number	378
SCHOOL	School Number	379
TEACHER	Teacher Number	380
STUDENT	Student Number	380
SEX	Sex of Student	381
PERIODS	Class Periods Spent on Activity	381
OUTCLASS	Hours Spent on Activity Outside of Class	382
ENJOY	Activity Was Enjoyable	382
DIFFICULT	Activity Was Difficult	383
THINK	Activity Made Me Think	383
LONG	Activity Was Too Long	384
IMPORT	Activity Was Important to Me	384
USEFUL	Learned Useful Things	385
KNEW	Already Knew Most Things	385
RECMND	Would Recommend This Activity	386
ATTITUDE	Chose Activity Because--Attitude	386
COGNITIV	Chose Activity Because--Cognitive	387
LOGISTIC	Chose Activity Because--Logistic	387
LEARNED	The Most Important Thing I Learned Was	388
COMMENT	Comments on Activity	388
Magic Motion		389
ACTVTYNO	Activity Number	389
SCHOOL	School Number	389
TEACHER	Teacher Number	390
STUDENT	Student Number	391

SEX	Sex of Student	391
PERIODS	Class Periods Spent on Activity	392
OUTCLASS	Hours Spent on Activity Outside of Class	392
ENJOY	Activity Was Enjoyable	393
DIFFICULT	Activity Was Difficult	393
THINK	Activity Made Me Think	394
LONG	Activity Was Too Long	394
IMPORT	Activity Was Important to Me	395
USEFUL	Learned Useful Things	395
KNEW	Already Knew Most Things	396
RECMND	Would Recommend This Activity	396
ATTITUDE	Chose Activity Because--Attitude	397
COGNITIV	Chose Activity Because--Cognitive	397
LOGISTIC	Chose Activity Because--Logistic	398
LEARNED	The Most Important Thing I Learned Was	398
COMMENT	Comments on Activity	399
The Rainmakers		399
ACTVTYNO	Activity Number	399
SCHOOL	School Number	400
TEACHER	Teacher Number	401
STUDENT	Student Number	401
SEX	Sex of Student	402
PERIODS	Class Periods Spent on Activity	402
OUTCLASS	Hours Spent on Activity Outside of Class	403
ENJOY	Activity Was Enjoyable	403
DIFFICULT	Activity Was Difficult	404
THINK	Activity Made Me Think	404
LONG	Activity Was Too Long	405
IMPORT	Activity Was Important to Me	405
USEFUL	Learned Useful Things	406
KNEW	Already Knew Most Things	406
RECMND	Would Recommend This Activity	407
ATTITUDE	Chose Activity Because--Attitude	407
COGNITIV	Chose Activity Because--Cognitive	408
LOGISTIC	Chose Activity Because--Logistic	408
LEARNED	The Most Important Thing I Learned Was	409
COMMENT	Comments on Activity	409
Weather Music		410
ACTVTYNO	Activity Number	410
SCHOOL	School Number	410
TEACHER	Teacher Number	411
STUDENT	Student Number	411
SEX	Sex of Student	412
PERIODS	Class Periods Spent on Activity	412
OUTCLASS	Hours Spent on Activity Outside of Class	413
ENJOY	Activity Was Enjoyable	413
DIFFICULT	Activity Was Difficult	414
THINK	Activity Made Me Think	414
LONG	Activity Was Too Long	415
IMPORT	Activity Was Important to Me	415
USEFUL	Learned Useful Things	416
KNEW	Already Knew Most Things	416
RECMND	Would Recommend This Activity	417

ATTITUDE	Chose Activity Because--Attitude	417
COGNITIV	Chose Activity Because--Cognitive	418
LOGISTIC	Chose Activity Because--Logistic	418
LEARNED	The Most Important Thing I Learned Was	419
COMMENT	Comments on Activity	419
Weather--Granny Oakes		420
ACTVTYNO	Activity Number	420
SCHOOL	School Number	420
TEACHER	Teacher Number	421
STUDENT	Student Number	421
SEX	Sex of Student	422
PERIODS	Class Periods Spent on Activity	422
OUTCLASS	Hours Spent on Activity Outside of Class	423
ENJOY	Activity Was Enjoyable	423
DIFFICULT	Activity Was Difficult	424
THINK	Activity Made Me Think	424
LONG	Activity Was Too Long	425
IMPORT	Activity Was Important to Me	425
USEFUL	Learned Useful Things	426
KNEW	Already Knew Most Things	426
RECMND	Would Recommend This Activity	427
ATTITUDE	Chose Activity Because--Attitude	427
COGNITIV	Chose Activity Because--Cognitive	428
LOGISTIC	Chose Activity Because--Logistic	428
LEARNED	The Most Important Thing I Learned Was	429
COMMENT	Comments on Activity	429
Do Dew Drops Drop?		430
ACTVTYNO	Activity Number	430
SCHOOL	School Number	430
TEACHER	Teacher Number	431
STUDENT	Student Number	431
SEX	Sex of Student	432
PERIODS	Class Periods Spent on Activity	432
OUTCLASS	Hours Spent on Activity Outside of Class	433
ENJOY	Activity Was Enjoyable	433
DIFFICULT	Activity Was Difficult	434
THINK	Activity Made Me Think	434
LONG	Activity Was Too Long	435
IMPORT	Activity Was Important to Me	435
USEFUL	Learned Useful Things	436
KNEW	Already Knew Most Things	436
RECMND	Would Recommend This Activity	437
ATTITUDE	Chose Activity Because--Attitude	437
COGNITIV	Chose Activity Because--Cognitive	438
LOGISTIC	Chose Activity Because--Logistic	438
LEARNED	The Most Important Thing I Learned Was	439
COMMENT	Comments on Activity	439
The Storm		440
ACTVTYNO	Activity Number	440
SCHOOL	School Number	440
TEACHER	Teacher Number	441
STUDENT	Student Number	442

SEX	Sex of Student	442
PERIODS	Class Periods Spent on Activity	443
OUTCLASS	Hours Spent on Activity Outside of Class	443
ENJOY	Activity Was Enjoyable	444
DIFFICULT	Activity Was Difficult	444
THINK	Activity Made Me Think	445
LONG	Activity Was Too Long	445
IMPORT	Activity Was Important to Me	446
USEFUL	Learned Useful Things	446
KNEW	Already Knew Most Things	447
RECMND	Would Recommend This Activity	447
ATTITUDE	Chose Activity Because--Attitude	448
COGNITIV	Chose Activity Because--Cognitive	448
LOGISTIC	Chose Activity Because--Logistic	449
LEARNED	The Most Important Thing I Learned Was	449
COMMENT	Comments on Activity	450

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Using the KNOWING Data Files, HSPKNOW and KNOWACT

The two data files, HSPKNOW and KNOWACT, provide cross-referenced data of the instruments used in the formative evaluation of the BSCS Human Sciences Module KNOWING. The data files for HSPKNOW were prepared by assembling the seven cards for each case (student), listing these cards to verify student numbers, and then to ascertain that every case was complete with either data or blank cards. Printouts were reviewed for the number of cards with data, and all cases that had only one or two cards with data were removed from the cases for further processing. Card listing and SPSS Frequencies computations were made to check the accuracy of each case and to determine any outliers for any variable that would be on the boundaries for that variable. Where anomalies were found, original papers for the student were used to make corrections or ascertain that the values were accurate as typed. When the data files were determined to be valid with every student record, the data file HSPKNOW was built.

The file KNOWACT was developed from data cards sorted by activity number. SPSS Frequencies were run on each variable within each activity number to identify outliers and to make corrections by consulting the original data where necessary. When the validity of each activity file was ascertained, the data tape was prepared. The resulting two data tapes make it possible for studies that relate student file data and/or logic and pre- and post-test data and/or attitude data to activity choice patterns, the ratings of activities by any student. Also ratings for each activity by students can be determined. Many other studies can be used in relating activity choice patterns or activity evaluation patterns to student characteristics.

APPENDIX A
Requests for Data File and Codebook Shipment

The Human Sciences KNOWING Module data file, HSPKNOW, and the file KNOWACT have three components, the data tape, the machine readable user's guide, and the codebook. Although the user's guide was termed machine readable and was so printed on the title, the determination was made not to include the user's guide as a machine readable volume since it could be obtained on microfiche at a very much reduced cost. The user's guides and the codebooks are available on microfiche or in hard copy. The codebooks are also available on tape. The data, stored as an SPSS systems file, is available on magnetic tape. Output can be written from two runs, one for card images and the second for SPSS labels. These tapes will be produced by a CDC Cyber computer. Users with CDC hardware may order an SPSS systems file tape if desired. A request form for ordering tape materials appears on the next page of this user's guide. Labels produced by CDC equipment cannot be used by other computers. To avoid problems in reading the tape, an unlabeled tape is recommended. Both the SPSS labels and the card images will be prepared in forms that can be read by any computing system. SPSS labels and data will be output using the SPSS 8.0 version. Tape titles are listed below. Use these titles on the Tape Order Form:

Human Sciences KNOWING Module Data File, HSPKNOW
Human Sciences KNOWING Module Activity Evaluation File, KNOWACT
Codebook for Human Sciences KNOWING Module Data File, HSPKNOW
Codebook for Human Sciences KNOWING Module Activity Evaluation File, KNOWACT

Requests for the user's guide and codebooks should specify whether print copy or microfiche is desired. Use the Nontape Order Form for these materials. Cost estimates will be sent prior to preparation and delivery. The publication Human Sciences Evaluation Materials discussed in the first section of this user's guide may also be ordered on the Nontape Order Form.

TAPE ORDER FORM

Name: _____

Address: _____

_____

_____

Title of Tape(s) Requested: _____

_____

_____

TAPE RECORDING SPECIFICATIONS
(Circle your specifications):

Seven-Track Tape

Density	200	556	800
Parity	Even	Odd	
Record Blocking	Blocked	Unblocked	
Maximum block size	_____		
Record length	80 columns	Other _____	
CDC Standard Labels	Labeled	Not labeled	
1-6 character label	_____		
Character code	ASCII	EBCDIC	Other_____

Nine-Track Tape

Density	800	1600	6250
Parity	Odd		
Record Blocking	Blocked	Unblocked	
Maximum block size	_____		
Record length	80 columns	Other _____	
CDC Standard Labels	Labeled	Not labeled	
1-6 character label	_____		
Character code	ASCII	EBCDIC	Other_____

Send to: BIOLOGICAL SCIENCES CURRICULUM STUDY
833 W. South Boulder Road
Louisville, CO 80027

NONTAPE ORDER FORM

Name: _____

Address: _____

_____

_____

MATERIALS REQUESTED

No. Copies	Title	Form
_____	Human Sciences KNOWING Module Data File, HSPKNOW, User's Guide for the Machine Readable Data File	_____Print _____Microfiche
_____	Codebook for the Human Sciences Data File HSPKNOW	_____Print _____Microfiche
_____	Codebook for Human Sciences KNOWING Module Activity Education File, KNOWACT	_____Print _____Microfiche
_____	Human Sciences Evaluation Materials	_____Print _____Microfiche

Order these materials from:

ERIC Clearinghouse for Science, Mathematics and
Environmental Education
The Ohio State University
1200 Chambers Road, Third Floor
Columbus, OH 43212